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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,847	03/12/2001	Sung-jin Kim	030681-288	7816

7590 06/07/2004

Charles F. Wieland III
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O.Box 1404
Alexandria, VA 22313-1404

EXAMINER	
KLINGER, SCOTT M	
ART UNIT	**PAPER NUMBER**
2153	7

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/802,847	Applicant(s) KIM ET AL.	
	Examiner Scott M. Klinger	Art Unit 2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-24 are pending.

Priority

A claim for foreign priority has been made. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. The effective filing date for subject matter in the application is 14 March 2000.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6-13, and 16-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki (U.S. Patent Number 6,611,262, hereinafter "Suzuki"). Suzuki discloses the generation of a bit stream containing binary image/audio data that is multiplexed with a code defining an object in ASCII format. Suzuki shows,

In referring to claims 1 and 21,

- Setting downstream/upstream channels between the server and the terminal as initialization:

  "Next, the operation of the above embodiment will be described. When a user inputs, from an external terminal (not shown), a request signal for causing a certain AV object to

be displayed, a request signal REQ is supplied to the scene control circuit 301. Upon reception of the request signal REQ, the scene control circuit 301 determines what AV object should be transmitted by referring to the scene description SD that is stored in the storage device 302 based on the request signal REQ, and outputs a scene request signal SREQ to the storage device 302." (Suzuki, col. 11, lines 7-15)

- The terminal forming an upstream channel message if a user request of predetermined processing of a predetermined object is occurred in a scene transmitted from the server to the terminal through the downstream channel, and transmitting the message to the server through the upstream channel:
  Suzuki, col. 11, lines 7-15 (see full quote above)
- The server receiving the upstream channel message, interpreting the message, processing the message as the user request of predetermined processing, and transmitting the result to the terminal:
  Suzuki, col. 11, lines 7-15 (see full quote above)
- The terminal substituting the processing result of step (c) for the predetermined object in the scene transmitted in step (b), and providing it to the user:
  Refreshing the display when the user receives the result of the user request is inherently implied in a system that displays said request upon receipt.

In referring to claim 2,

- Defining the corresponding node in the scene, in which the user request occurred, using information on objects forming the transmitted scene:
  "In a method for producing three dimensional space modeling data defined by a plurality of nodes and image/audio data specified by a position included in the nodes, the following steps are carried out: extracting a respective position from a node of the three dimensional space modeling data" (Suzuki, col. 8, lines 8-13)
- Determining the node identifier of the defined node, using information on the objects:
  "converting the extracted position into a stream ID corresponding to image/audio data associated with the position" (Suzuki, col. 8, lines 13-15)

Suzuki, Fig. 2 shows that each element has a unique identifier.

- Defining a command to be executed in the server for the defined node, in response to the user request:
  Suzuki, col. 11, lines 7-15 (see full quote above)
- Forming an upstream channel message containing the node identifier and the command:
  The message containing the node identifier with the command is inherently implied in a system in which a user request requests a specific object/node

In referring to claims 3 and 13,

- The information on the objects contains node identifiers based on sequence information or locations of nodes corresponding to the objects in the scene generated based on a binary format:
  "According to one aspect of the present invention, the three dimensional space modeling data is described by Virtual Reality Modeling Language (VRML), the position is represented by Uniform Resource Locator (URL) expressed in ASCII format, and the stream ID is expressed in binary format." (Suzuki, col. 8, lines 19-24)

In referring to claim 6,

- Receiving the upstream channel message, interpreting the node identifier in the upstream channel message, and defining a subject node to be processed, if a subject node to be processed is defined, confirming a node command in the upstream channel message, and processing the subject node according to the node command:
  Suzuki, col. 11, lines 7-15 (see full quote above)

In referring to claims 7 and 17,

- The node interpreter defines a subject node after confirming at least whether or not the node identifier is for a node contained in the scene, and the structure type of the node indicated by the node identifier:

"As described above, when the various type of data is supplied to the corresponding object synthesizing circuits 500-502, it is necessary to find what objects the bit streams that have been processed by the respective decoders 407-409 belong to. Therefore, the ID numbers OD_ID described in the object descriptors OD are collated (matched) by the matching circuit 360 with the ID numbers OD_ID described in the scene description B-SD before the data is supplied to the corresponding object synthesizing circuits." (Suzuki, col. 15, lines 50-59), confirming whether a requested node is in the scene is inherently implied in a system that requests a specific node for a specific scene

In referring to claims 8 and 18,

- The node interpreter defines a subject node after confirming information on nodes directly dependent on the node indicated by the node identifier:
  Suzuki, Fig. **2** shows the structure of the nodes. Confirming information on nodes directly dependent on the node indicated by the node identifier is inherently implied in a system that has a hierarchal node structure.

In referring to claims 9 and 19,

- The node interpreter defines all the nodes in the scene as subject nodes if the node identifier is a value for all the nodes in the scene as subjects:
  Suzuki, Fig. **2** shows the structure of the nodes. Defining all the nodes in the scene as subject nodes if the node identifier is a value for all the nodes in the scene as subjects is inherently implied in a system that has a hierarchal node structure.

In referring to claims 10 and 20,

- The scene is generated based on a moving picture expert group (MPEG)-4 binary format in an MPEG-4 system, the server has an MPEG-4 scene encoder, and the terminal has an MPEG-4 scene decoder:

"A typical example of high-efficiency coding (compression) schemes for a moving picture is the MPEG (Moving Picture Experts Group; moving picture coding for storage) scheme, which is discussed in ISO-IEC/JTC1/SC2/WG11 and was proposed as a standard. MPEG employs a hybrid scheme that is a combination of motion-compensation predictive coding and DCT (discrete cosine transform) coding. To accommodate various applications and functions, MPEG defines several profiles (classification of functions) and levels (quantities such as an image size). The most basic item is a main level of a main profile (MP@ML).

An example of configuration of an encoder (image signal coding apparatus) of MP@ML of the MPEG scheme will be described with reference to FIG. 24." (Suzuki, col. 2, line 66 – col. 3, line 13)

In referring to claim 11,

- A server for transmitting through a downstream channel a three-dimensional scene generated based on a binary format:
  Suzuki, col. 8, lines 19-24 (see full quote above)
  "The single scene description SD is a collection of all the nodes SD0-SD4. In the following, a collection of descriptions of all nodes is called a scene description and the respective nodes are called objects (two-dimensional or three-dimensional objects)." (Suzuki, col. 10, lines 25-29)
- Receiving and interpreting an upstream channel message, and processing the message as user's request of predetermined processing:
  Suzuki, col. 11, lines 7-15 (see full quote above)
- A terminal for forming an upstream channel message if a user request of predetermined processing for a predetermined object in the scene transmitted from the server occurs, and transmitting the message to the server through an upstream channel:
  Suzuki, col. 11, lines 7-15 (see full quote above)

In referring to claim 12,

- A node interpreter for defining a corresponding node in the scene, for which the user request occurred, using information on the objects forming the transmitted scene:
  Suzuki, col. 8, lines 8-13 (see full quote above)
- A node identifier determiner for determining a node identifier of the defined node, using information on the objects:
  Suzuki, col. 8, lines 13-15 (see full quote above), Suzuki, Fig. 2 shows that each element has a unique identifier.
- A command generator for defining a command to be processed in the server, in response to the user request for the defined node:
  Suzuki, col. 11, lines 7-15 (see full quote above)
  A command generator for defining a command to be processed in the server, in response to the user request for the defined node is inherently implied in a system in which a user requests data and the server transmits said data
- An upstream channel message transmitter forming an upstream channel message containing the node identifier and the command:
  The message containing the node identifier with the command is inherently implied in a system in which a user request requests a specific object/node

In referring to claim 16,

- An upstream channel message receiver for receiving the upstream channel message:
  Suzuki, col. 11, lines 7-15 (see full quote above), an upstream channel message receiver for receiving the upstream channel message is inherently implied in a system that receives and responds to an upstream channel message
- A node interpreter for interpreting the node identifier in the upstream channel message and defining subject nodes to be processed:
  Suzuki, col. 8, lines 13-15 (see full quote above), Suzuki, Fig. 2 shows that each element has a unique identifier.

- A command processor for confirming node commands in the upstream channel message, if the subject nodes are defined, and processing the subject nodes according to the node commands:
  Suzuki, col. 11, lines 7-15 (see full quote above), a command processor for confirming node commands in the upstream channel message is inherently implied in a system that processes node commands

In referring to claims 22 and 24,

- The upstream channel message is formed to have at least an inherent identifier, which can be confirmed in a server assigned for the predetermined element:
  Suzuki, col. 8, lines 13-15 (see full quote above)
- A command corresponding to the user request of predetermined processing:
  A command corresponding to the user request is inherently implied in a system in which a user requests data and the server transmits said data

In referring to claim 23,

- A server for transmitting multimedia contents through a downstream channel, receiving and interpreting an upstream channel message, and processing the message as user's request of predetermined processing; and a terminal for forming an upstream channel message if a user request of predetermined processing for a predetermined element in the multimedia contents transmitted from the server occurs, and transmitting the message to the server through an upstream channel:
  Suzuki, col. 11, lines 7-15 (see full quote above)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 5, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Tenev et al. (U.S. Patent Number 6,654,761, hereinafter "Tenev").

In referring to claim 4, although Suzuki shows substantial features of the claimed invention, including the system of claim 2 (see 102 rejection above), Suzuki does not show determining whether or not the defined node is reusable in the scene. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Suzuki as evidenced by Tenev.

In analogous art, Tenev discloses controlling which part of data defining a node-link structure is in memory. Tenev shows determining whether or not the defined node is reusable in the scene: *"In modifying which part of node-link data is in memory, the iteration can determine whether to remove any of the node-link data from memory. Upon determining to do so, the iteration can apply a criterion to determine which part to remove. For example, each iteration can receive a navigation signal, and the criterion can be a navigation history criterion. More generally, the criterion can select an element that is least recently traversed, such as from a list of nodes defined by the part of node-link data in memory, with the nodes ordered within the list according to how recently each node has been traversed."* (Tenev, col. 2, line 28-38) A system that deletes nodes from memory inherently implies that when a deleted node is requested it would be determined that it needs to be downloaded. When a node is already in memory it would not need to be re-downloaded.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Suzuki so as to determine whether a node is reusable and only download the data if it is not, such as taught by Tenev, in order to avoid downloading redundant data.

In referring to claim 5, Suzuki in view of Tenev shows,

- If the defined node and all other nodes in the scene are not reusable, the node identifier of the defined node is determined as a value which is for all nodes as subjects:
  A system that determines reusable nodes and then downloads node data inherently implies downloading all non-reusable nodes

In referring to claim 14, although Suzuki shows substantial features of the claimed invention, including the system of claim 12 (see 102 rejection above), Suzuki does not show determining whether or not the defined node is reusable in the scene. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Suzuki as evidenced by Tenev.

In analogous art, Tenev discloses controlling which part of data defining a node-link structure is in memory. Tenev shows determining whether or not the defined node is reusable in the scene: *Tenev, col. 2, line 28-38* (see full quote above). A system that deletes nodes from memory inherently implies that when a deleted node is requested it would be determined that it needs to be downloaded. When a node is already in memory it would not need to be re-downloaded.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Suzuki so as to determine whether a node is reusable and only download the data if it is not, such as taught by Tenev, in order to avoid downloading redundant data.

In referring to claim 15, Suzuki in view of Tenev shows,

- The node identifier generator sets the node identifier of the defined node to a value for all nodes as subjects, if the defined node and all other nodes in the scene are not reusable:
  A system that determines reusable nodes and then downloads node data inherently implies downloading all non-reusable nodes

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (703) 305-8285. The examiner can normally be reached on M-F 7:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott M. Klinger
Examiner
Art Unit 2153

smk

GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100